

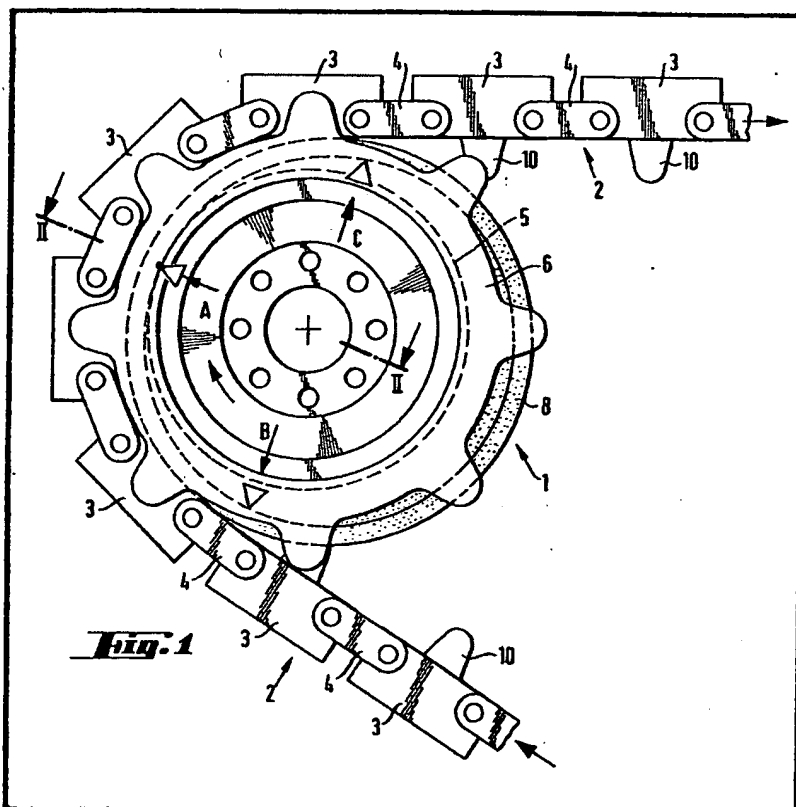
(12) UK Patent Application (19) GB (11) 2 086 817 A

- (21) Application No 8129179
 (22) Date of filing 28 Sep 1981
 (30) Priority data
 (31) 3042173
 (32) 8 Nov 1980
 (33) Fed. Rep. of Germany (DE)
 (43) Application published
 19 May 1982
 (51) INT CL³
 B62D 55/08
 (52) Domestic classification
 B7H E1F E2C1 E2D E2H
 (56) Documents cited
 GB 1538807
 GB 1536838
 GB 694884
 GB 548869
 GB 421261
 GB 299158
 US 4082372
 (58) Field of search
 B7H
 F2Q
 (71) Applicant
 Krauss-Maffei
 Aktiengesellschaft,
 2 Krauss-Maffei-Strasse,
 München 50,
 Germany
 (72) Inventor
 Horst Seit
 (74) Agents
 Matthews, Hadden & Co.,
 Hadden House,
 33, Elmfield Road,
 Bromley,
 Kent, BR1 1SU

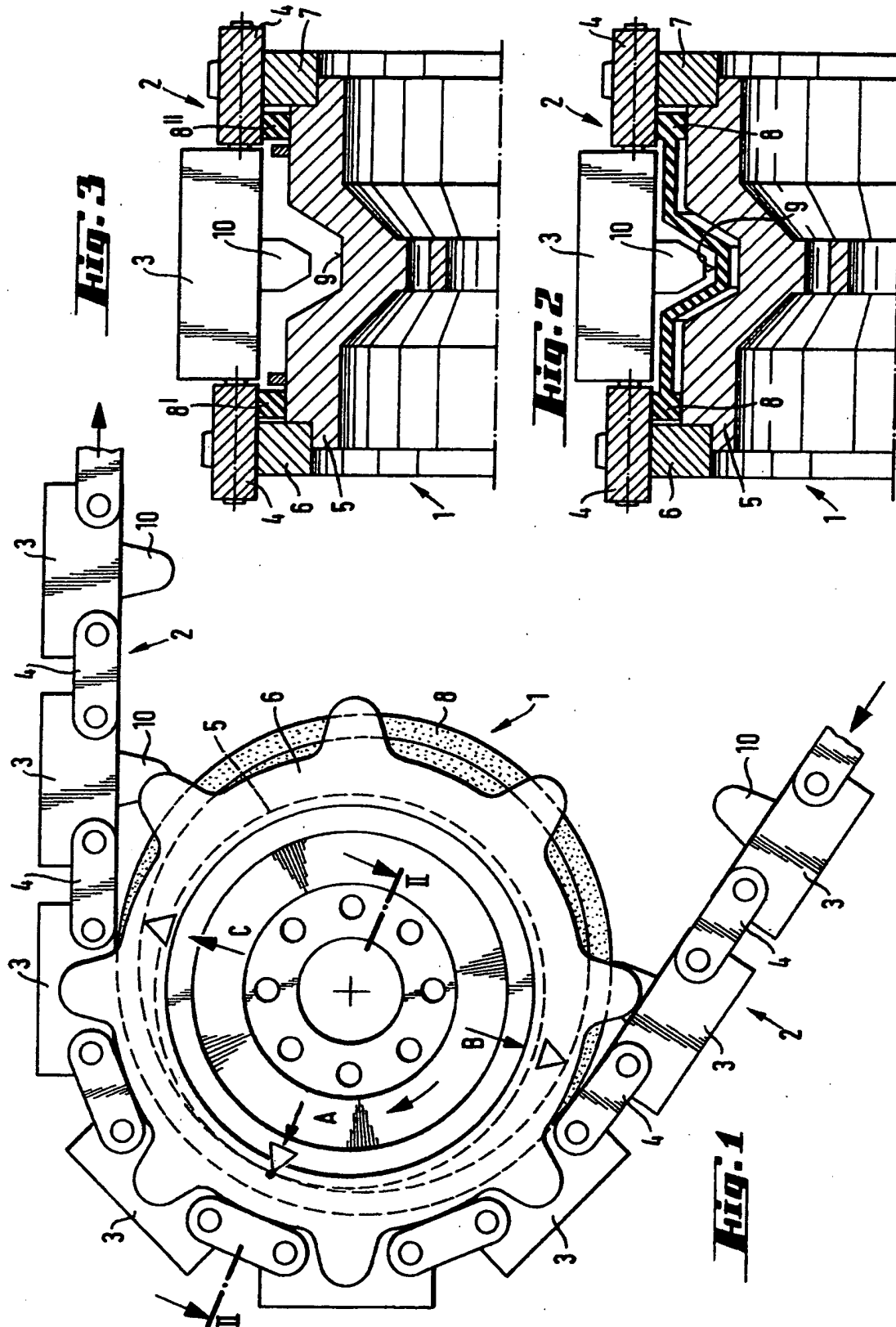
(54) Track Mechanism for Track-laying Vehicles

(57) A device is provided for cushioning an endless track (2) as it engages the drive sprocket wheel (1) or idler sprocket wheel, which consists of one or several cushioning rings (8) which rest on the drive sprocket drum (5) or on the circumferential surface of the idler sprocket wheel. The inside diameter of the cushioning ring (8) is larger than the outside diameter of the drive sprocket drum (5) or larger than the circumferential surface diameter

of the idler sprocket wheel respectively and is so adapted to the track pitch and the looping angle that the end connectors (4) engaging the drive sprocket wheel (1) and/or the track links (3) come to lie on the cushioning ring (8) before they are placed on the sprockets (6, 7) and/or on the drive sprocket sprocket drum (5). It is possible to equip existing crawler track travel mechanisms, such as that used on a tank, supplementarily with the device at low cost. The cushioning ring may be elastically deformable.



GB 2 086 817 A



SPECIFICATION

Track Mechanism for Track-Laying Vehicles

The invention relates to a crawler track travel mechanism for a track-laying vehicle.

5 In connection with crawler track travel mechanisms, it is a problem that, at the track ascent, the individual track links and end connectors suddenly come into engagement with the drive sprocket wheel and the idler sprocket wheel respectively and thus produce oscillations which cause the adjoining functional elements, more especially the walls of the undercarriage sump to vibrate violently. These vibrations lead to a considerable impairment of the highly sensitive optical and electronic instruments of the armoured vehicle and manifest themselves by a loud noise, which causes the powers of concentrations of the crew in the interior of the armoured vehicle to be impaired, on the one hand, and the combat effectiveness of the vehicle to be reduced, on the other hand, since it can be located acoustically from long distances.

It is indeed already known to provide, next to the drive sprocket wheel rim, a ring which is elastically spring-loaded by means of rubber and onto which the crawler track runs in a cushioned manner. However, this arrangement has the disadvantage that the rubber suitable for the cushioning is relatively resilient so that there is formed in the rubber support beneath the ring a bulge which revolves during operation, causing the rubber material to be subjected to considerable heating and mechanical stress so that it becomes useless by early fatigue.

35 The object of the invention is to provide a device for cushioning the crawler track as it ascends the drive sprocket wheel and the idler sprocket wheel respectively which device will render possible a long period of operation at a low production expenditure.

40 According to the invention there is provided a track travel mechanism for a track-laying vehicle comprising a track which passes over a drive sprocket assembly, an idler sprocket wheel as well as over track rollers and whose track links are connected to end connectors, the drive sprocket assembly including a drum and sprockets which are provided with teeth which engage with the end connectors, and a device for cushioning the crawler track as it engages the drive sprocket wheel assembly or idler sprocket wheel having one or several cushioning rings which rest on the drive sprocket drum or on the circumferential surface of the idler sprocket wheel, the inside diameter of the cushioning rings being larger than the outside diameter of the drive sprocket drum or larger than the circumferential surface diameter of the idler sprocket wheel respectively and being so adapted to the track pitch and the looping angle that the end connectors engaging the drive sprocket wheel and/or the track links come to lie on the cushioning rings before they are placed on the sprockets and/or on the drive sprocket drum.

This arrangement results in the special

65 advantage that it is possible to equip existing crawler track travel mechanisms, such as that used on a tank, supplementarily with the device at low cost.

70 In a preferred constructional form, the cushioning ring is designed so as to be elastically deformable so that, in operation, it assumes an oval shape. This causes the end connectors to come earlier into contact with the cushioning ring in the zone of ascent, a proportion of the impact energy being already compensated for by the spring action of the elastic cushioning ring.

75 Further features and advantages will emerge from the following description of an exemplified embodiment with reference to the drawings, in which:

80 Figure 1 shows, in a diagrammatical representation a side view of a drive sprocket which is in engagement with the crawler track,

Figure 2 shows a sectional view of the drive sprocket according to the line of intersection II—II in Fig. 1, and

Figure 3 shows a sectional view of another constructional form according to Fig. 2.

Fig. 1 shows a drive sprocket wheel 1 with a revolving crawler track 2 which is substantially composed of track links 3 and end connectors 4, by means of which the track links 3 are connected together. The drive sprocket 1 consists substantially of a drive sprocket drum 5 and two scroll gears 6 and 7 (Fig. 2), with which the crawler track 2, with its end connectors 4, is in engagement.

Between the scroll gears 6 and 7, there is provided on the drive sprocket drum 5 a cushioning ring 8 which, as can be seen in Fig. 2, has a circumferential groove 9 for the reception of the spigots 10 located on the track links 3.

Fig. 3 shows a different constructional form, wherein, instead of one cushioning ring, there roll two individual cushioning rings 8' and 8'' on the drive sprocket drum 5.

Since the inside diameter of the cushioning ring 8 and that of the cushioning rings 8' and 8'' is larger than the outside diameter of the drive sprocket drum 5, the cushioning ring has, due to the track looping, an eccentric position relative to the drive sprocket 1, which causes it to come to rest on the drive sprocket drum 5 in an angular position, which is marked by the arrow A and which it substantially maintains in operation.

115 The inside diameter of the cushioning ring 8 and that of the cushioning rings 8' and 8'' is furthermore so adapted to the pitch of track and the looping angle of the crawler track 2 that the crawler track 2, as it ascends the drive sprocket 1, is initially placed, with its end connectors 4, on the cushioning ring 8 or the rings 8' and 8'' in a fixed angular position which is marked by the arrow B. During this process, the cushioning ring 8 or the rings 8' and 8'' is/are pivoted, which causes the descending track 2 to be lifted approximately in the angular position marked by the arrow C. In this way, the impact energy contained in the end connectors 4 is used up for

- lifting the descending track 2 which is subjected to tension, whereby there is brought about a delayed softer ascent on the scroll gears 6 and 7 of the drive sprocket 1. This effect can be further improved in that the cushioning ring 8 or the cushioning rings 8' and 8" are designed so as to be elastically deformable, thus causing them to assume an oval shape in operation and additionally to take over the function of a shock-absorbing spring in the zone of ascent.
- 10 The operation of an idler sprocket wheel provided with a cushioning ring 8 or cushioning rings 8' and 8" occurs in a corresponding manner.

Claims

- 15 1. A track travel mechanism for a track-laying vehicle, comprising a track which passes over a drive sprocket assembly, an idler sprocket wheel as well as over track rollers and whose track links are connected to end connectors, the drive sprocket assembly including a drum and sprockets which are provided with teeth which
- 25 engage the end connectors, and a device for cushioning the crawler track as it engages the drive sprocket wheel assembly or idler sprocket wheel having one or several cushioning rings which rest on the drive sprocket drum or on the circumferential surface of the idler sprocket wheel, the inside diameter of the cushioning rings being larger than the outside diameter of the drive sprocket drum or larger than the circumferential surface diameter of the idler sprocket wheel respectively and being so adapted to the track pitch and the looping angle that the end connectors engaging the drive sprocket wheel and/or the track links come to lie on the cushioning rings before they are placed on the sprockets and/or on the drive sprocket drum.
- 30 2. A track travel mechanism as claimed in claim 1, wherein the cushioning rings are elastically deformable.
- 35 3. A track travel mechanism for a track-laying vehicle substantially as described herein with reference to the accompanying drawings.
- 40

Printed for Her Majesty's Stationery Office by the Courier Press, Leamington Spa, 1982. Published by the Patent Office,
25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.

DERWENT-ACC-NO: 1982-F7685E

DERWENT-WEEK: 198220

COPYRIGHT 2007 DERWENT INFORMATION LTD

TITLE: Cushioning device for track of track-laying vehicle -
comprises set of elastically deformable cushioning rings
resting of drive sprocket drum

INVENTOR: SEIT, H

PRIORITY-DATA: 1980DE-3042173 (November 8, 1980)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
GB 2086817 A	May 19, 1982	N/A	004	N/A
DE 3042173 A	June 16, 1982	N/A	000	N/A
FR 2493793 A	May 14, 1982	N/A	000	N/A
GB 2086817 B	July 4, 1984	N/A	000	N/A

INT-CL (IPC): B62D055/08

ABSTRACTED-PUB-NO: GB 2086817A

BASIC-ABSTRACT:

The device cushions an endless track (2) as it engages the drive sprocket wheel (1) or idler sprocket wheel. The device consists of one or several cushioning rings (8) which rest on the drive sprocket drum (5) or on the circumferential surface of the idler sprocket wheel.

The inside diameter of the cushioning ring is larger than the outside diameter of the drive sprocket drum and is so adapted to the track pitch and the looping angle that the end connectors (4) engaging the drive sprocket wheel (1) and/or the track links (3) come to lie on the cushioning ring (8) before they are placed on the sprockets (6).

ABSTRACTED-PUB-NO: GB 2086817B

EQUIVALENT-ABSTRACTS:

The device cushions an endless track (2) as it engages the drive sprocket wheel (1) or idler sprocket wheel. The device consists of one or several cushioning rings (8) which rest on the drive sprocket drum (5) or on the circumferential surface of the idler sprocket wheel.

The inside diameter of the cushioning ring is larger than the outside diameter of the drive sprocket drum and is so adapted to the track pitch and the looping angle that the end connectors (4) engaging the drive sprocket wheel (1) and/or the track links (3) come to lie on the cushioning ring (8) before they are placed on the sprockets (6).

———— KWIC ————

Basic Abstract Text - ABTX (1):

The device cushions an endless track (2) as it engages the drive sprocket wheel (1) or idler sprocket wheel. The device consists of one or several cushioning rings (8) which rest on the drive sprocket drum (5) or on the circumferential surface of the idler sprocket wheel.

Equivalent Abstract Text - ABEQ (1):

The device cushions an endless track (2) as it engages the drive sprocket wheel (1) or idler sprocket wheel. The device consists of one or several cushioning rings (8) which rest on the drive sprocket drum (5) or on the circumferential surface of the idler sprocket wheel.

Standard Title Terms - TTX (1):

CUSHION DEVICE TRACK TRACK LAY VEHICLE COMPRISE SET ELASTIC DEFORM
CUSHION
RING REST DRIVE SPROCKET DRUM